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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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ALEXANDRIA, VA 22320-4850				
EXAMINER				
LEONARD, MICHAEL L				
ART UNIT		PAPER NUMBER		
1796				
NOTIFICATION DATE		DELIVERY MODE		
11/17/2009		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/529,894

Applicant(s)

BURCKHARDT ET AL.

Examiner

MICHAEL LEONARD

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 October 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 11-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 4-10 and 21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI/08)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Group I, Claims 1 and 3-13 and 21 in the reply filed on 08/24/2009 is acknowledged. The traversal is on the ground(s) that the catalyst system is more than just obtainable from one bismuth compound and at least one aromatic nitrogen compound. This is not found persuasive because the newly amended claim 1 will be rejected below and thus the inventive feature is not patentable over prior art.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 4-10, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,788,083 to Dammann et al. in view of U.S. Patent No. 3,635,906 to Jayawant.

As to claims 1, 5, 21 Dammann discloses a polyurethane coating and primer composition (Column 11, lines 65) prepared from a hydroxyl containing compound and an isocyanate (Abstract) and a catalyst system which is obtained from a bismuth or tin catalyst, a complexing agent selected from a mercapto group all in the presence of a

tertiary amine (Column 2, lines 50-58) wherein the amine activator can be selected from quinoline or isoquinoline (Column 10, lines 61-62).

Dammann discloses a reaction with a mercaptan group to produce a more stable catalyst system that enables the pot life of the polyol/polyisocyanate mixture to be twice as long as the same mixture containing only the tin catalyst (Column 4, lines 10-17). It would have been obvious to a person of ordinary skill in the art to combine react a tertiary amine activator such as quinoline or isoquinoline in combination with a stable catalyst as disclosed by Dammann to enhance the conversion of the inactive catalyst species III to active catalyst species II or IV in order to promote a faster reaction between the polyol and polyisocyanate.

It is noted that claim 4 further limits optional component B. However, claim 4 is still rejected under Dammann as being an optional component.

Dammann fails to disclose wherein R7 is OH on the aromatic nitrogen compound.

Jayawant discloses a method for preparing polyurethanes using a tin catalyst in combination with a beta-hydroxy nitrogen-heterocyclic fused aromatic (Column 1, Abstract of the disclosure) such as 8-hydroxyquinolines of the formula presented in Column 7, line 65.

Dammann and Jayawant are analogous art because they are from the same field of endeavor with respect to preparation of polyurethanes and because they are solving the same problem which is using certain chelate-forming compounds that have the effect of delaying initiation of reaction between polyisocyanates and organic

polyhydroxyl compounds (Jayawant, Column 1, lines 66-70, Dammann, Column 2, lines 59-62). Dammann and Jayawant disclose the use of tin catalysts in the catalyst systems. Dammann further disclosed that the metal catalyst can contain bismuth, such as bismuth tricarboxylates (Dammann, Column 5, line 5 and 29).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use 8-hydroxyquinoline as disclosed by Jayawant in the catalyst system disclosed by Dammann to aid in the suppression of the reaction between polyisocyanates and hydroxyl-containing compounds, thereby extending the pot life of the reaction medium without retarding the rate of cure, once cure is initiated (Jayawant, Column 1, lines 70-72).

As to claim 6, Dammann discloses conventional bismuth catalysts, such as, bismuth tricarboxylates (acetates, oleates, etc.) that can be used in the present invention.

As to claim 7, Dammann discloses with respect to the proportions of catalyst system that the tin or bismuth catalyst should be adjusted to be in an effective catalytic amount for the polyol/isocyanate reaction. Typically, this translates into catalyst concentration levels ranging from 0.0001 to about 1.0 weight percent (Column 8, lines 43-47). Dammann further discloses that the catalyst/complexing ratios will vary depending upon the particular tin or bismuth catalyst, the particular mercaptan, and the polyol and polyisocyanate chosen. Generally, the metal content of the catalyst ranges from 2:1 to 500:1 mole ratios (Column 8, lines 55-62). Dammann further discloses that

the proportion of the amine activator may range up to 6 percent or more, percentages of less than 1, such as 0.25 will suffice (Column 11, lines 15-19).

As to claim 8, Dammann discloses in formula IV (Drawings section) wherein the tertiary amine activator is bonded to the tin compound. It should be noted that while the tin coordination bond is shown, Dammann discloses even though the foregoing description are illustrative of the present invention include tin as the metal compound, the active metal catalyst may also be bismuth (Column 5, lines 3-5). Dammann further discloses that the isocyanate functionality is reactive with the complexing agent (mercapto group) which enhances the conversion of inactive catalyst species III (tin or bismuth) to active catalyst species IV (Column 4, lines 59-62 and drawings).

As to claim 9, Dammann discloses catalyst systems containing mixtures of tin or bismuth coordinated complexes (Column 2, lines 18-19).

As to claim 10, Dammann discloses drying or curing the coating at ambient temperature (Column 17, Table 13).

Response to Arguments

Applicant's arguments filed 08/24/2009 have been fully considered but they are not persuasive. The applicant initially argued that the Dammann reference did not disclose an aromatic compound that would meet the amended claims and thus the single reference rejection is not longer viable. As a result a two-reference rejection will be used to reject the amended claims.

The applicants' then argued that the Jayawant reference did not describe the use of a bismuth catalyst. The examiner would like to point out that the secondary reference was used to show that aromatic nitrogen compounds that have been substituted with functional groups have been used before as catalysts in polyurethane development and that a person of ordinary skill in the art would substitute one for the other. Furthermore, Dammann further discloses that tin as well as bismuth complexes can be used in combination with the aromatic amine compounds and as a result, one of ordinary skill in the art would see that tin and bismuth complexes can be used interchangeably as catalysts for polyurethane synthesis and one of ordinary skill would substitute the tin catalyst of Jayawant with the Bismuth catalyst of Dammann to arrive at the claimed invention.

The applicants' further argued that one of ordinary skill in the art would not have combined the teachings of Jayawant and Dammann to arrive at the claimed invention. However, the examiner would like to point to both disclosures that show that Dammann and Jayawant are analogous art because they are from the same field of endeavor with respect to preparation of polyurethanes and because they are solving the same problem which is using certain chelate-forming compounds that have the effect of delaying initiation of reaction between polyisocyanates and organic polyhydroxyl compounds (Jayawant, Column 1, lines 66-70, Dammann, Column 2, lines 59-62). Dammann and Jayawant disclose the use of tin catalysts in the catalyst systems. Dammann further disclosed that the metal catalyst can contain bismuth or tin, such as bismuth tricarboxylates (Dammann, Column 5, line 5 and 29). Therefore, at the time of the

invention it would have been obvious to a person of ordinary skill in the art to use 8-hydroxyquinoline as disclosed by Jayawant in the catalyst system disclosed by Dammann to aid in the suppression of the reaction between polyisocyanates and hydroxyl-containing compounds, thereby extending the pot life of the reaction medium without retarding the rate of cure, once cure is initiated (Jayawant, Column 1, lines 70-72), which is the same problem that both inventions were trying to solve.

The applicants' further argued that Dammann and Jayawant do not describe the unexpected results regarding a low increase in viscosity. Viscosity was not a claimed property of the invention and thus the viscosity property is not commensurate in scope with the claimed invention because it was not a requirement. However, in light of this, viscosity would have been an inherent property of the combination of Jayawant and Dammann because the two components making up the catalyst, bismuth tris(neodecanoate) and 8-hydroxyquinoline, are known catalysts in the formation of polyurethane compositions. One of ordinary skill in the art would assume that the combination of both Dammann and Jayawant would produce a catalyst system with the required low viscosity because a chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. *In re Spada*, 911 F.2d 705, 15 USPQ2d 1655, (Fed. Cir. 1990). See also *In re Best*, 562 F.2d 1252, 195 USPQ 430, (CCPA 1977). "Where the claimed prior art products are identical or substantially identical in structure or composition, or are produced by identical or

substantially identical processes, a prima facie case of either anticipation or obviousness has been established.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **MICHAEL LEONARD** whose telephone number is (571)270-7450. The examiner can normally be reached on Mon-Fri 7:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MICHAEL LEONARD/
Examiner, Art Unit 1796

/Randy Gulakowski/
Supervisory Patent Examiner, Art Unit 1796